Housing model for a pyromechanical disconnecting device

The invention relates to a pyromechanical disconnecting device, in particular for switching off a battery in a motor vehicle, with a housing in which a current conductor rail is arranged, constructed as able to be cut through by a disconnecting tool at a disconnecting point, wherein the disconnecting tool can be accelerated by the propellants of an ignition element and the ignition element has electrical connecting pins, is inserted into a receiving space in the housing and is supported on a supporting floor of this receiving space and the supporting floor has through bores for the connecting pin.

With disconnecting devices of this kind it is known also to insert into the housing a supporting element, which has a supporting function for absorbing the back pressure during triggering of the ignition element. This supporting element usually consists of metal.

According to the prior art this supporting element is inserted into an injection mould for the housing as an insertion part and injected with the housing. This process is cost-intensive, as the insertion process is usually done by hand. Additionally there are the costs for the insertion part itself.

The object of the invention is to enable simple and yet safe installation of an ignition element into the pyromechanical disconnecting device.

According to the invention this object is achieved in that an elastic sealing element is arranged between the ignition

element and the supporting floor. This sealing element acts as axial tolerance compensation for the ignition element and at the same time represents a sealing function against the penetration of moisture.

In one embodiment the supporting element is an O-ring. Alternatively, the sealing element may also be a flat seal, which is arranged on the supporting floor and through which the connecting pins project.

In a further embodiment the sealing element is an elastic compensation element injected on to the supporting floor.

The housing consists of a high-strength insulating material, preferably a plastics material, with which glass fibres or carbon fibres may be mixed for mechanical stiffening.

The invention is explained in greater detail below using three figures.

Fig. 1 shows a detail from a pyromechanical disconnecting device which can be used for switching off the battery in a motor vehicle.

In a housing 1 made of a high-strength insulating material, with which glass fibres or carbon fibres are mixed for stiffening, a receiving space 7 is arranged, in which there is an ignition element 5, which on initiation generates a propellant. This propellant accelerates a disconnecting tool 6, which in turn cuts through a current conductor rail (not shown), arranged in the housing 1 or in the receiving space 7, at a disconnecting point.

The ignition element 5 is supported on a supporting floor 2 of the receiving space 7, the ignition element 5 having two connecting pins 9, which project through the supporting floor 2 at two through bores 3. The connecting pins 9 are connected from outside to a plug 10.

Between the ignition element 5 and the supporting floor 2 is arranged an elastic sealing element 4, which acts as axial tolerance compensation for the inserted ignition element 5. At the same time this sealing element 4 represents a sealing function against penetration of moisture.

As shown in Fig. 1, this sealing element 4 is an O-ring which is supported on a conical flank 8 of the ignition element 5 and the supporting floor 2.

In Fig. 2 an embodiment of the elastic sealing element 4 is shown, in which the sealing element 4 is an elastic compensation element injected on to the supporting floor 2. This compensation element, like the O-ring shown in Fig. 1, is supported on a conical flank 8 of the ignition element 5.

Fig. 3 shows an embodiment of the sealing element 4, in which the sealing element 4 is a flat seal which is arranged on the supporting floor 2 and through which the connecting pins 9 of the ignition element 5 project.